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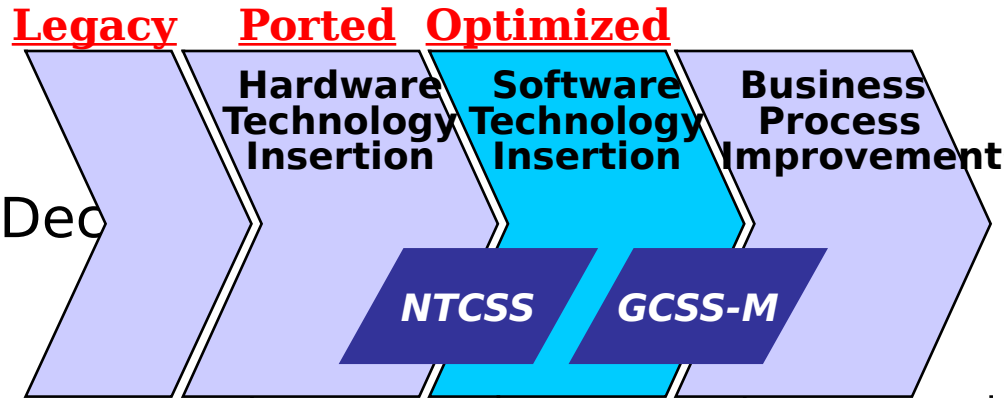
Naval Tactical Command Support System

http://c4iweb.spawar.navy.mil/pmw151/

Agenda

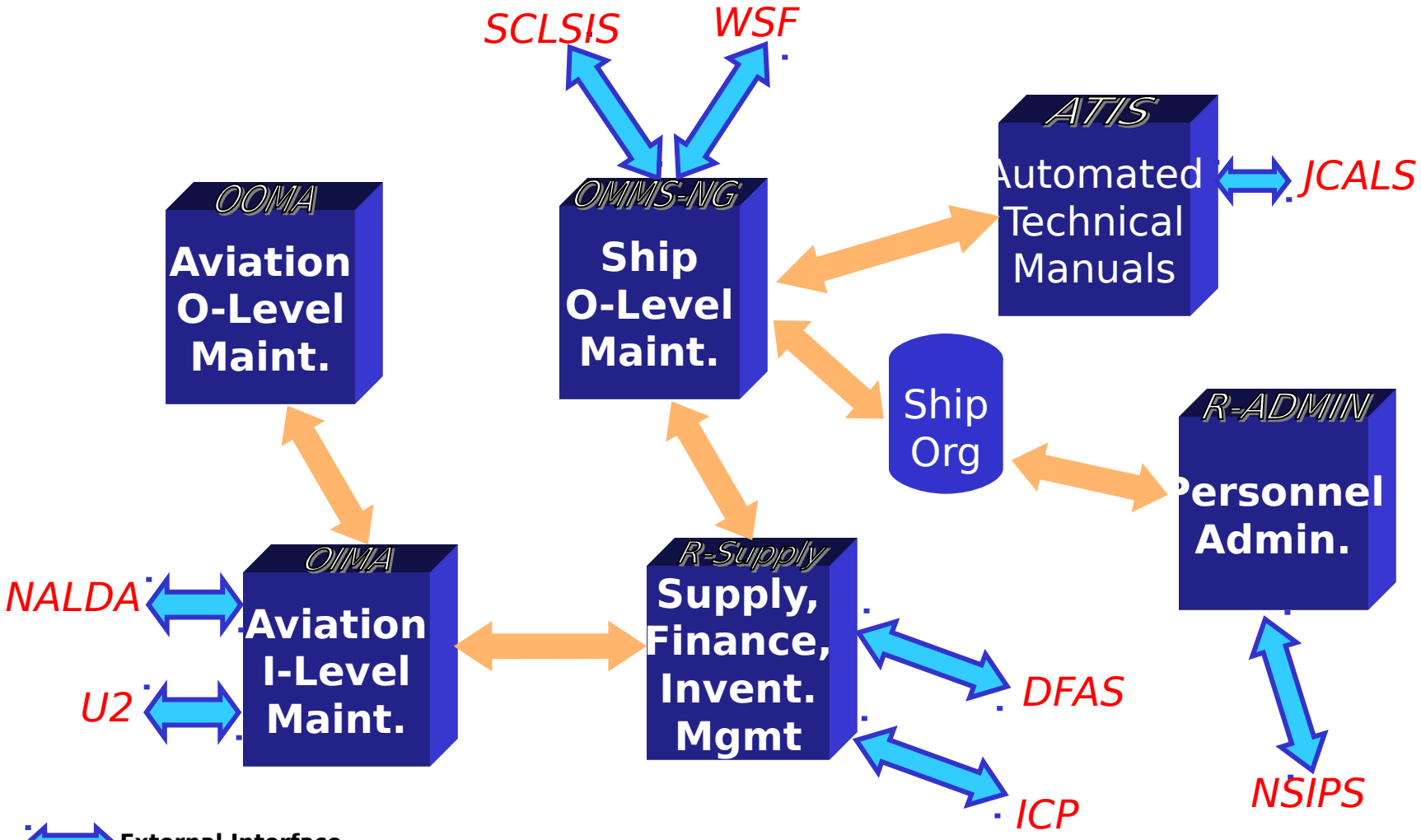
- Description
- Role
- NTCSS Applications
- Program Schedule
- Installation Schedule
- Vision
- Training

NTCSS (ACAT IAC)



- Requirement: MNS-27 SEP 94
- Milestone: MSIIIA - 14 SEP 98
- OIMA/RSupply/RADM: MSIIIB - Dec
- OOMA: MSIIIC- Jul 00
- Developer: SSC Chesapeake,
- Hardware procurements: IDIQ
- Basic Description of System:
  - Provides standardized tactical support information systems capability to afloat and deploying shore-based fleet activities.
  - Incorporates
    - Aviation, Surface & Subsurface Maintenance
    - Supply, Inventory, Food Service, Retail Sales, Finance
    - Administration, Manpower, Personnel, Medical
  - Building to open system GCSS-M architecture
  - Uses Business Process Improvement (BPI) and Functional Economic Analysis (FEA) to support future enhancements

What is NTCSS?



Note: Only major interfaces are shown

Applications tailored to

Unit Level Ships

- R-Supply
- OMMS-NG
- R-ADM
- FSM
- ROM
- SAMS

Force Level Ships

- R-Supply = Supply/Financial
- OMMS-NG = Ship/Sub Maintenance
- R-ADM = Unit Administration
- FSM = Food Service
- ROM = Retail Sales
- SAMS = Medical Administration

Squadrons/MALS

- OMA = Aviation Maintenance

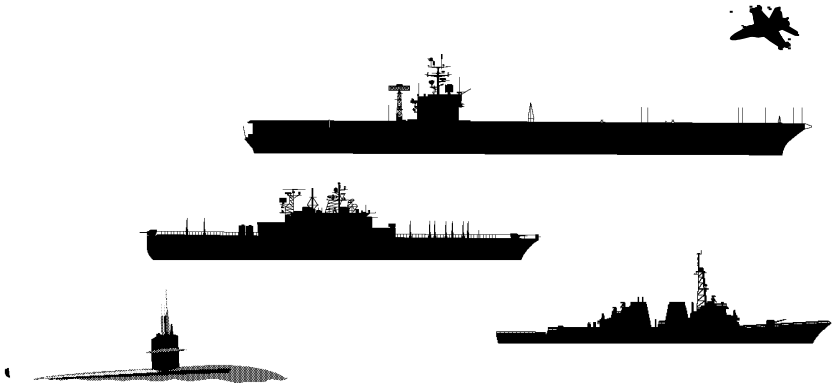
Air Stations/MALS

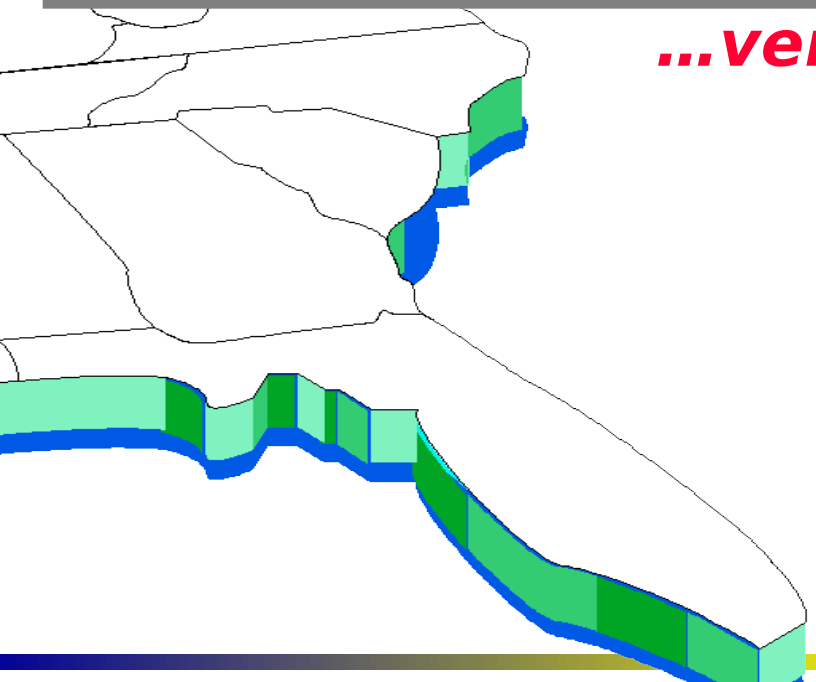
- IMA
- R-Supply
- R-ADM

NTCSS Capabilities

. . . What NTCSS does:

- ✔ Supply Support, Inventory & Financial control
- ✔ Surface & Subsurface Organizational Maintenance
- ✔ Aviation Intermediate and Organizational Maintenance
- ✔ Personnel Administration
- ✔ Food Service, Retail Sales, Medical Administration





...versus

. . . What NTCSS does not do:

- Logistics Planning
- Theater Transportation Tracking
- Joint Total Asset Visibility (JTAV) Tracking
- Munitions Tracking
- Theater Materiel Tracking
- Theater Medical
- Fuel

Customer Profile… 1,800+ sites

Afloat

- Carriers (CV, CVN)
- Surface (CG, CGN, DD, DDG, FFG)
- Submarines (SSBN, SSN)
- Amphibious (LCC, LHA, LHD, LPD, LPH, LSD, LST, LCAC)
- Mine Warfare (MCM, MHC)
- Patrol Craft (PC)
- Auxiliary and Support Ships
- Other (Ironsides, Deep Submergence)

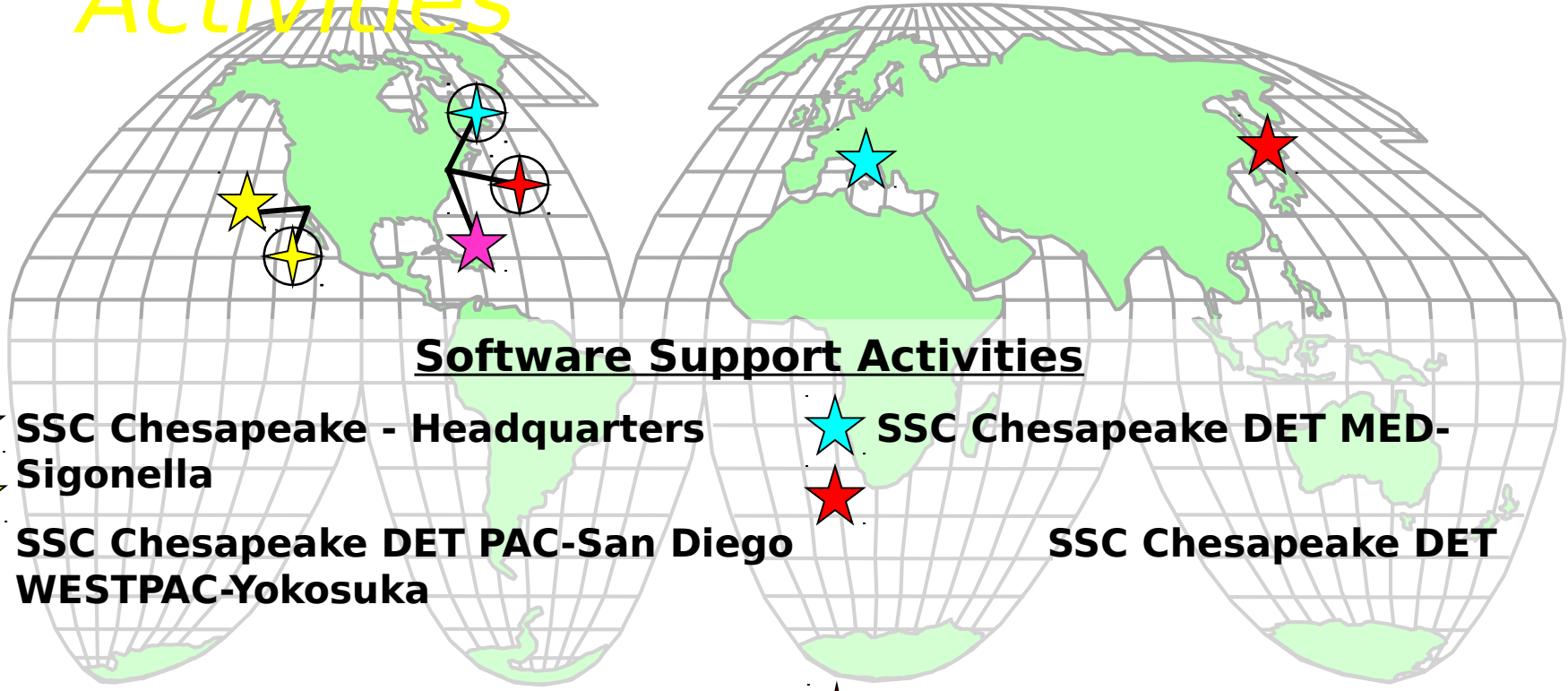
Squadrons, Groups, Teams

- Aviation (Navy, USMC), Surface, Sub, Amphibious
- Marine Aviation Logistics Squadrons SEAL, SPECWAR, DSV, CB, EOD, Fleet Surgical, ASWOC, BMU, etc.

Ashore, Other

- Fleet CINCs, Type Commanders
- Navy & Marine Air Stations & Facilities
- Coast Guard, White House Comm Center, NASA
- Naval Stations, Submarine Bases Weapons Stations
- Schools, Training Facilities
- Medical & Dental Clinics, Hospitals
- Fleet Integrated Logistics Overhaul
- Industrial Supply Centers, Depots
- Supervisor Shipbuilding & Conversion
- Ships Parts Control Center, Aviation Supply Office

Software/Hardware Support Activities



Software Support Activities

SSC Chesapeake - Headquarters Sigonella

SSC Chesapeake DET MED-

SSC Chesapeake DET PAC-San Diego WESTPAC-Yokosuka

SSC Chesapeake DET

Hardware Support Activities

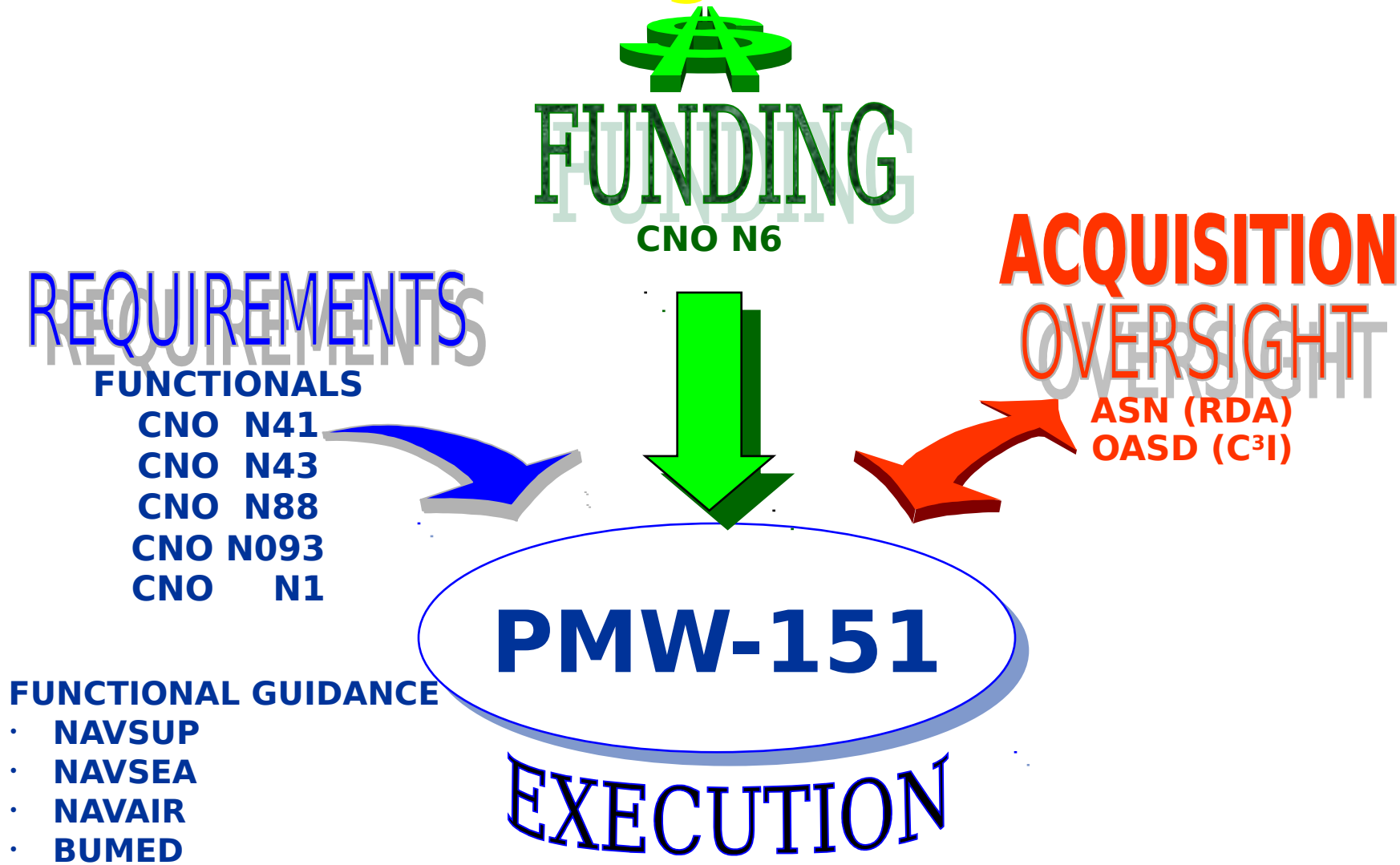
FTSC Atlantic* Creek

SSC Charleston DET St. Julians

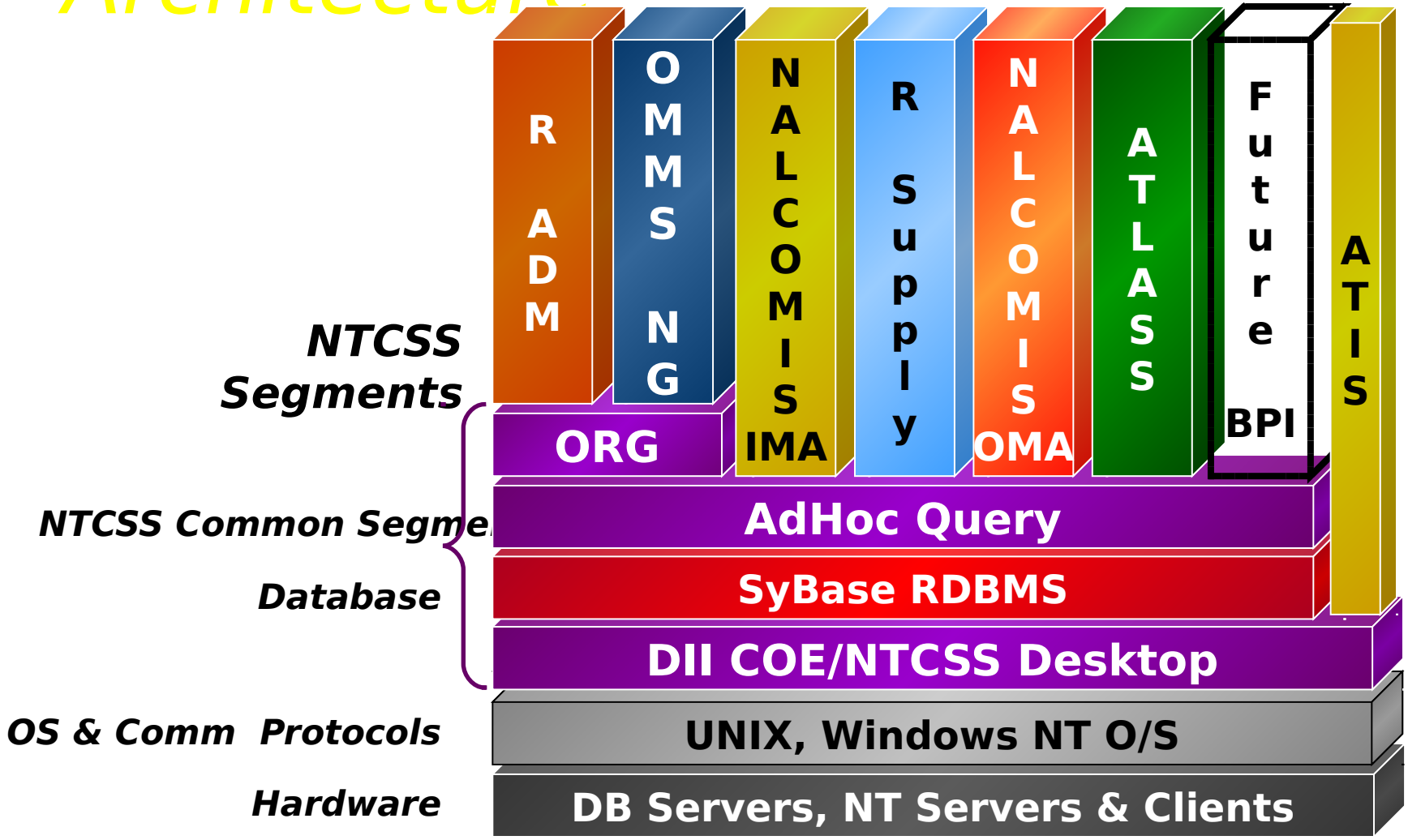
FTSC Pacific*

* On-Site Assistance for Trouble Calls

NTCSS Management

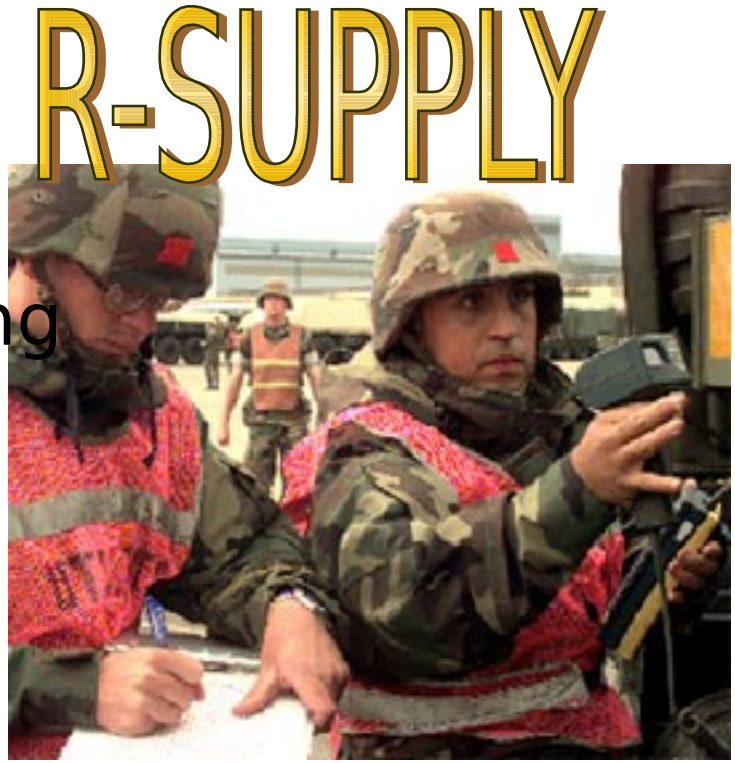


'Plug-in' Software Architecture



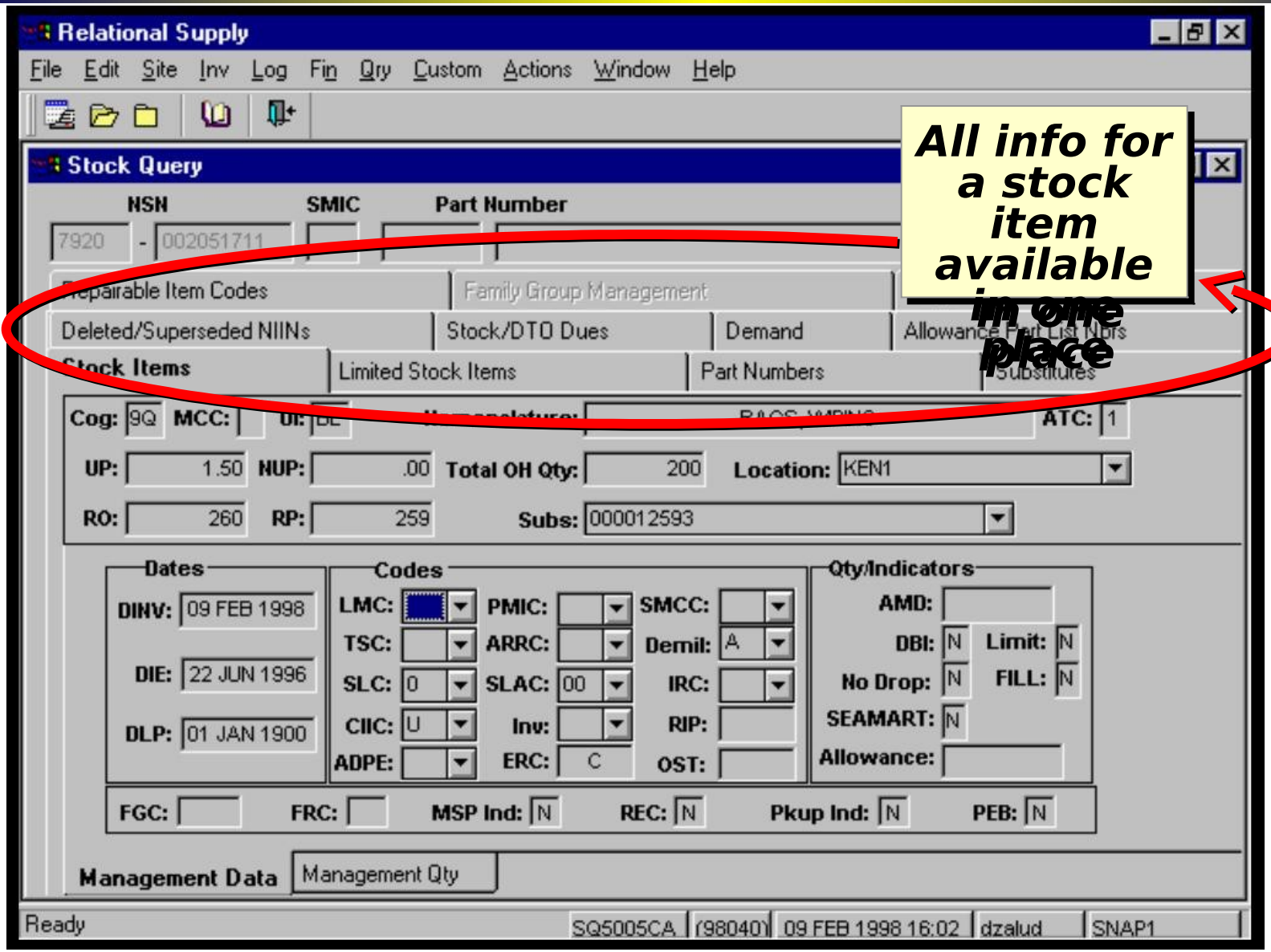
Relational Supply

- Provides:
  - Supply control
  - Requirements processing
  - Parts ordering and tracking
  - Inventory management
  - Financial management
- Interfaces with OMMS-NG and NALCOMIS IMA to process immediate issues of stocked items and off-ship ordering of Not-In-Stock material.



Relational Supply

A Relational Supply Window



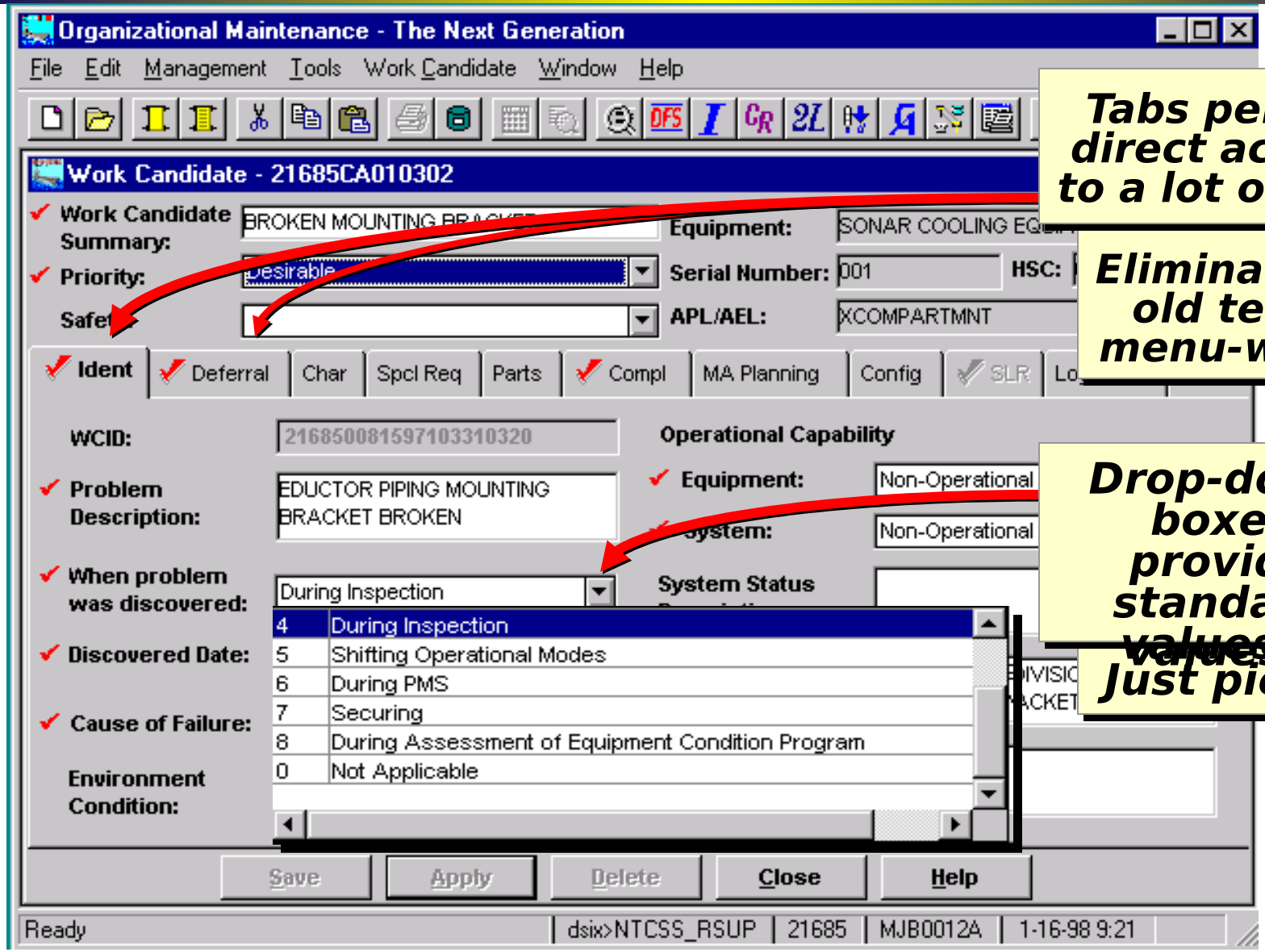
Shipboard Organizational Maintenance

- Automated management of:
  - Shipboard organizational-level corrective maintenance actions (work candidates)
  - Current Ship's Maintenance Project (CSMP)
  - Allowance Parts Lists (APL)
  - Consolidated Shipboard Allowance List (COSAL)
  - Production management system tracking all shipboard repairs

OMMS-NG

Organizational Maintenance Management System - Next Generation

An OMMS-NG Window

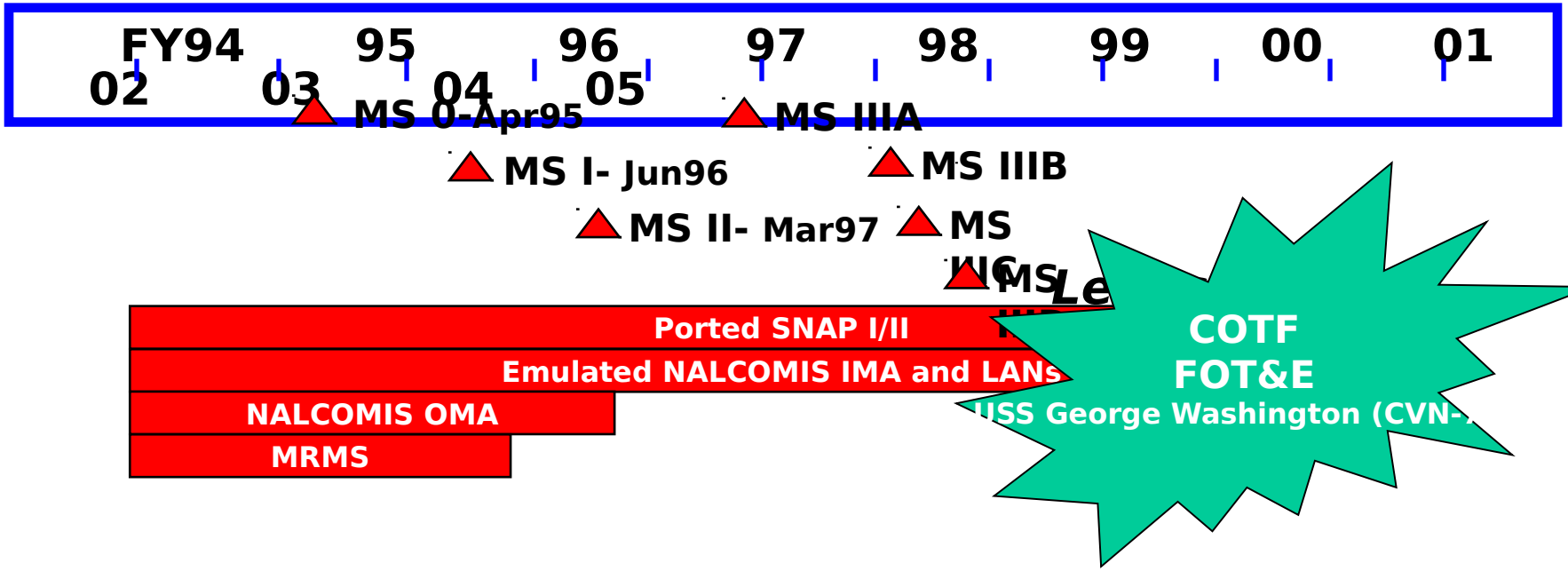


Tabs permit direct access to a lot of info

Eliminates the old tedious menu-walking

Drop-down boxes provide standard values. Just pick one

NTCSS Program Schedule



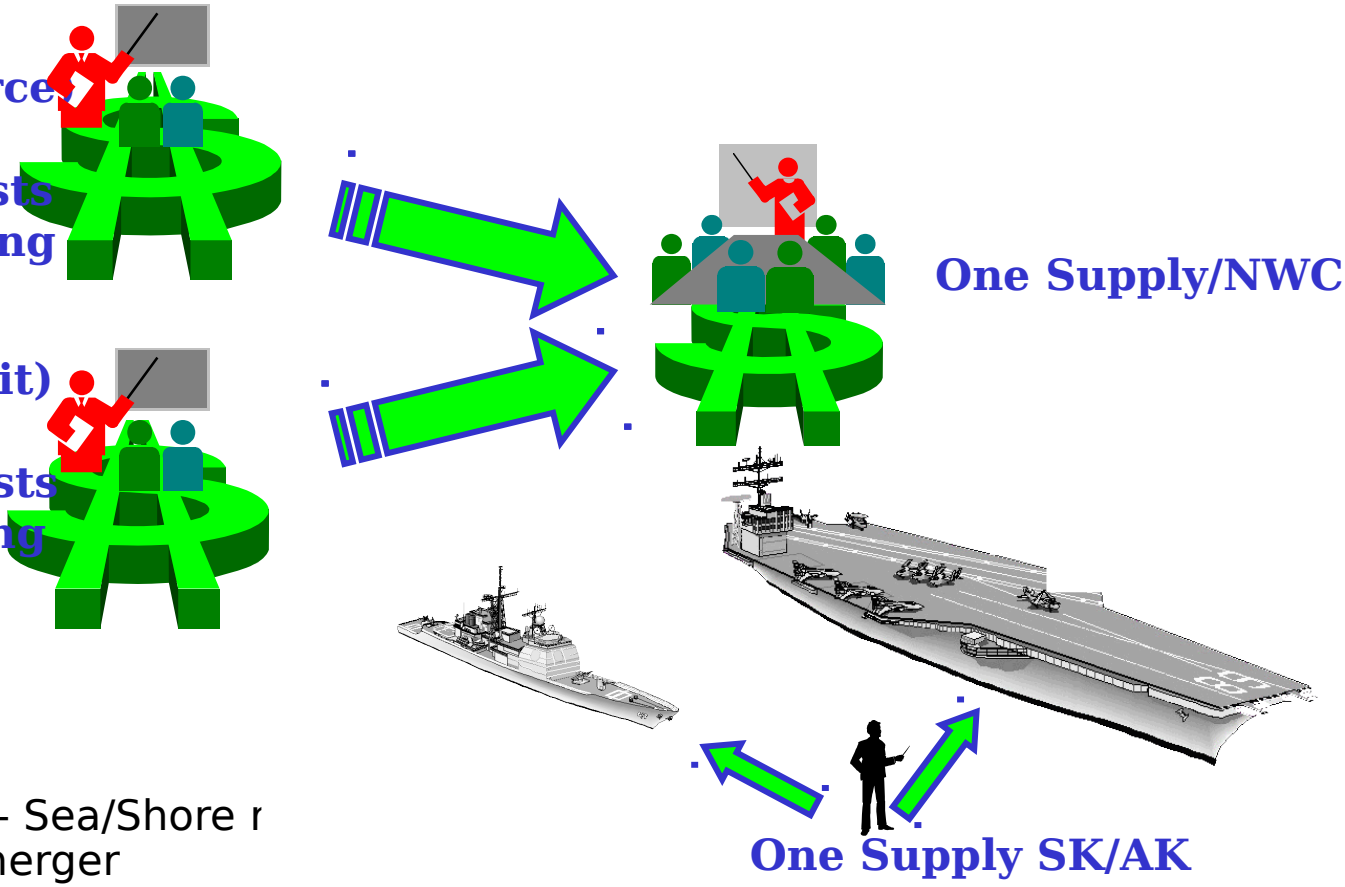
NTCSS Notional Installation

Schedule

Oct		Nov		Dec	
Site	Install	Site	Install	Site	Install
CVN 73 George Washington	Full	LSD 48 Ashland	Full	AGF 3 LaSalle	Backft
DIEGO GARCIA	Full	NAS Brunswick	Full	LPD 13 Nashville	Backft
SSN 770 Tuscon	Full	LHA 2 Saipan	NTCSSII	LPD 6 Duluth	Full
NSTCPAC Pearl Harbor	Full			ILO Pearl Harbor	Full
ILO San Diego	Full				
Jan		**Feb**		**Mar**	
Site	Install	Site	Install	Site	Install
DDG 78 Porter	Backft	LHA 4 Nassau	Backft	FFG 52 Carr	Full
SSN 700 Dallas	NTCSSII	SSN Albuquerque	NTCSSII	SSN Wyoming	NTCSSII
CG 52 Bunker Hill	Full	CVN 72 Abraham Lincoln	Full	FFG 37 Crommelin	Full
LSD 36 Anchorage	Full	ILO Yokosuka	Full	DD 992 Fletcher	Full
MALSEK	NTCSSII	ILO Sasebo	Full	ILO Puget Sound, Wa	Full
Apr		**May**		**June**	
Site	Install	Site	Install	Site	Install
NAS JRB Fort Worth	Full	DDG 57 Mitscher	Full	Subschol Groton	Full
CVN 75 Harry S. Truman	Backft	DDG 51 Arleigh Burke	Full	ILO Groton	Full
CG 56 San Jacinto	Full	DDG 79 Oscar Austin	Full	ILO Jacksonville	Full
LSD 37 Portland	Full	DDG 54 Curtis Wilbur	Full	CG 58 Philippine Sea	Backft
DD 978 Stump	Full	LCC 19 Blue Ridge	Backft	DDG 80 Roosevelt	Full
DDG 60 Paul Hamilton	Full	AGF 11 Coronado	Backft	LPD 8 Dubuque	Full
CG 70 Lake Erie	Full	NAWC Pt. Mugu	Full	CG 49 Vincennes	NTCSSII
CG 53 Mobile Bay	Backft				
LHA 1 Tarawa	NTCSSII				
July		**Aug**		**Sept**	
Site	Install	Site	Install	Site	Install
CVN 65 Enterprise (IOC 6)	Backft	LHD 3 Kearsarge	Full	NAS Sigonella	Full
SSN 719 Providence (First Subla	Full	FFG 47 Nicholas	Backft	ILO Ingleside Tx	Full
LSD 50 Carter Hall (IOC12)	Full	LPD 15 Ponce	Full	DD 982 Nicholson	Backft
DDG 71 Ross (IOC31)	Backft	LCC 20 Mt. Whitney	Full	DD 988 Thorn	Full
DDG 56 John S. McCain	Backft	LHD 4 Boxer	NTCSS II	MALS 26	Full
CG 59 Princeton	NTCSSII	LPD 10 Juneau	Backft	CG 65 Chosin	Full
LSD 43 Fort McHenry	Backft	CG 63 Cowpens	Full	FFG 51 Gary	Full
CVN 70 Carl Vinson	Full			DDG 77 OKane	Backft
LSD 49 Harpers Ferry	Full			DDG 63 Stetham	Full
				DDG 65 Benfold	Full

Vision - Single Supply System

- Significantly reduces cost of maintaining separate Retail and Wholesale versions of R-Supply



- Simplifies
  - Training
  - Documentation
  - SK assignment - Sea/Shore r
  - SK/AK ratings merger

Lack of Development Funding is a Challenge

Single Maintenance System

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Naval Tactical Command Support System

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NTCSS Training

NTCSS IPT

Date: 2-3 June 1999

SPAWAR PMW 151 held:

- **Review different training methods, OLPS, CBT, Embedded help.**
- **Identify specific training needs for NTCSS.**

NTCSS Training

NTCSS IPT

SPAWAR PMW 151
needed to:

- **Conduct a Front End Analysis (FEA)**

- **Build an overarching NTCSS Naval training Support Plan (NTSP)**

- **Train the trainer's: Involve them in the development of application to better prepare them for training**

TSA Background

Task Received: 23 August, 1999

SPAWAR PMW 151 Provided:

- **PEO A&M with identified sites and dates**
- **Suggested questions for SMEs at various sites**

NAWCTSD developed initial TSA outline (MIL PREF 29612)

- **Outline approved by SPAWAR PMW 151**

Purpose

- **Investigate training from the perspective of transition from legacy NALCOMIS to Optimized NALCOMIS which is being installed in the OOMA and OIMA**

- **Provide recommendations for:**
  - **Curriculum development requirements**
  - **Placement of course structure (“A” or “C” school)**
  - **Usable media**
  - **“in service training” elements**
  - **Manpower issues that surface**
  - **Additional hardware or network training needed**
  - **Top and Mid Tier training requirements**

Assumptions

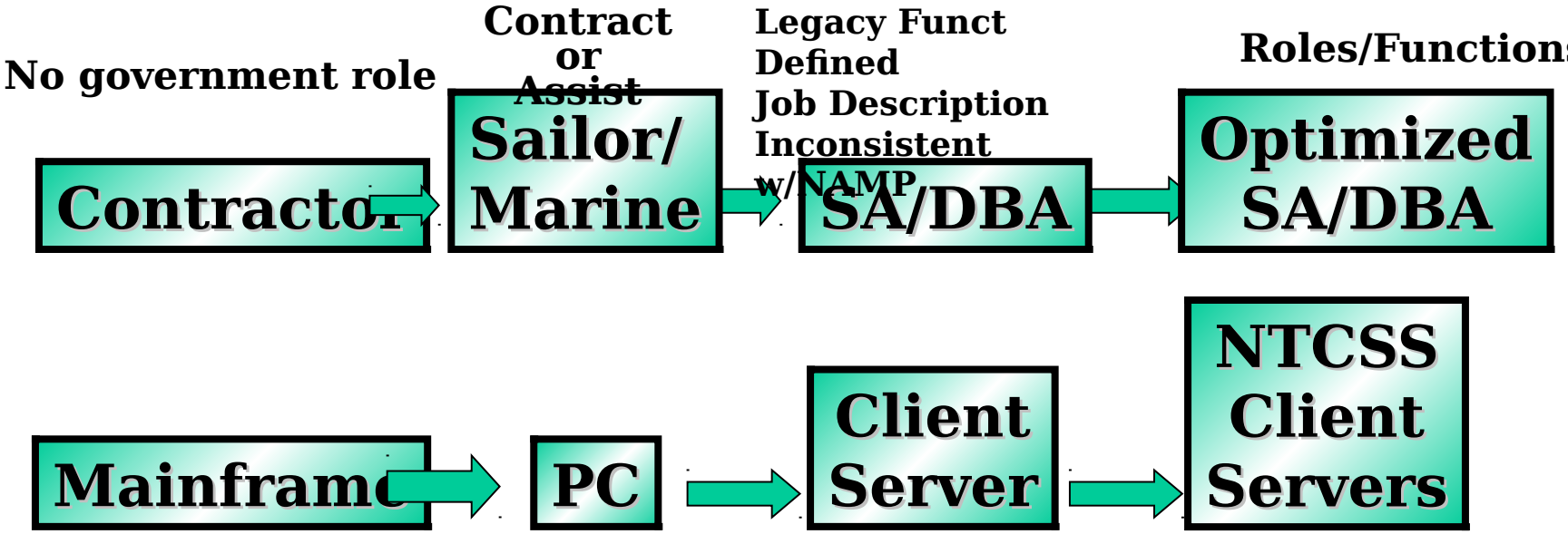
- **Adequate training documentation is available for review:**
  - **NALCOMIS ORD (legacy & optimized)**
  - **NALCOMIS NTSP (legacy & optimized)**
  - **NALCOMIS JTA (legacy)**
  - **CTTL/COI for AZ/AK "A", "C", "F" school courses associated with teaching legacy NALCOMIS**
- **Functional definitions of Legacy and Optimized NALCOMIS**
- **Job descriptions for individuals using legacy and optimized NALCOMIS**
- **Technical users documentation for optimized NALCOMIS**

Site Visits:

- NAS Patuxent River (Rotary Wing, NAVAIR 3.6.1/3.6.2, AIMD)
- MCAS New River (MALS 29)
- Norfolk (AIRLANT, AIMD, SSCC, FTC, FASO)
- San Diego (AIRPAC, AIMD, FASO)
- Washington DC (OPNAV N889H)
- NAS Pensacola (AZ/AK “C” School)
- NAS Meridian (AZ/AK “A” School)

Situation 1

Rapid evolution of NALCOMIS was driven by improvements in computer technology - primarily hardware



Impact 1.1

Lack of formally assigned roles & responsibilities (lack of training infrastructure) is having an impact on the effectiveness & efficiency of NALCOMIS training

Recommendation 1.1

- **Develop organization/project roster**
  - **All Government, Military, Contractor POCs**
  - **Define their specific responsibilities**
  - **Distribute roster to fleet & training offices.**

Impact 1.2

Apparent lack of formal decision making board to govern NALCOMIS training policy

Recommendation 1.2

- **Establish a NALCOMIS Training Advisory Review Task Analysis Working Group**
- **Provide overall NALCOMIS technical training policy and guidance**
- **Benefit is to provide direction and control**

Impact 1.3

There is no formal Job Task Analysis (JTA) documentation for legacy or optimized NALCOMIS (officers/enlisted).

Recommendation 1.3

- **Perform a formal JTA and develop JTA report**
- **Use report to determine who, what, where, when and how training will be provided**

Situation 2

- **Schedule for installation of Optimized NALCOMIS appears to be in constant change**

- **Formal schools are not included in distribution of new software releases**

- **Help section of the different software versions appears to be inconsistent with new versions**

Impact 2.1

Lack of formal implementation schedule is causing software configuration management problems in fleet and creating problems in providing *valid* training to fleet.

Recommendation 2.1

- **Include schoolhouses in distribution of a formal milestone chart of software releases**
- **Include AZ/AK "A" and "C" schools in pilot review of software.**
- **Connect the AZ/AK "A" and "C" school electronically to SSCC enabling schools to be kept current with the Optimized NALCOMIS development**
- **Equip AZ/AK "A" and "C" school classrooms with state of the art technology (electronic classroom environment) in order to provide effective and efficient instruction. Technology in AZ "C" classrooms should include NALCOMIS servers for more realistic instruction.**

Impact 2.2

NALCOMIS "embedded help" proposed by SSCC must be developed/maintained from an Instructional Systems Development (ISD) perspective

Recommendation 2.2

- **NALCOMIS Training Advisory Working Group establish a "New Training Development Committee" to coordinate the efforts of the curriculum developers at the formal schools and the software developers at SSCC. This will facilitate an integrated ISD approach to tutorials.**

Impact 2.3

Training organizations (formal and in-service schools) are not receiving appropriate feedback from fleet regarding content of course training materials. This affects *validity* of training.

Recommendation 2.3

- **NALCOMIS Training Advisory Working Group establish feedback procedure/mechanism to schools from fleet in timely manner to accommodate prototype software changes**

Recommendations

- **NALCOMIS is one application within NTCSS**
- **Training in other applications also lack training continuity**
- **TSA be done on highest priority, in order to identify problems affecting training effectiveness/efficiency**
- **Insure training infrastructure, job task analysis are conducted for all applications**

SUMMARY

- **Acting on TSA recommendations would:**
  - **providing a strong foundation (JTA) upon which to build courseware**
  - **providing an "updated training audit trail"**
  - **defining individual roles & responsibilities**
- **Accepting the TSA recommendations would:**
  - **allow for training material/documents to be "backfitted"**
  - **produce an effort that could be accomplished in a more effective & shorter time frame**
  - **allow a "team effort" of SMEs to provide a content validity check of training material**
  - **allow training design/development to be**

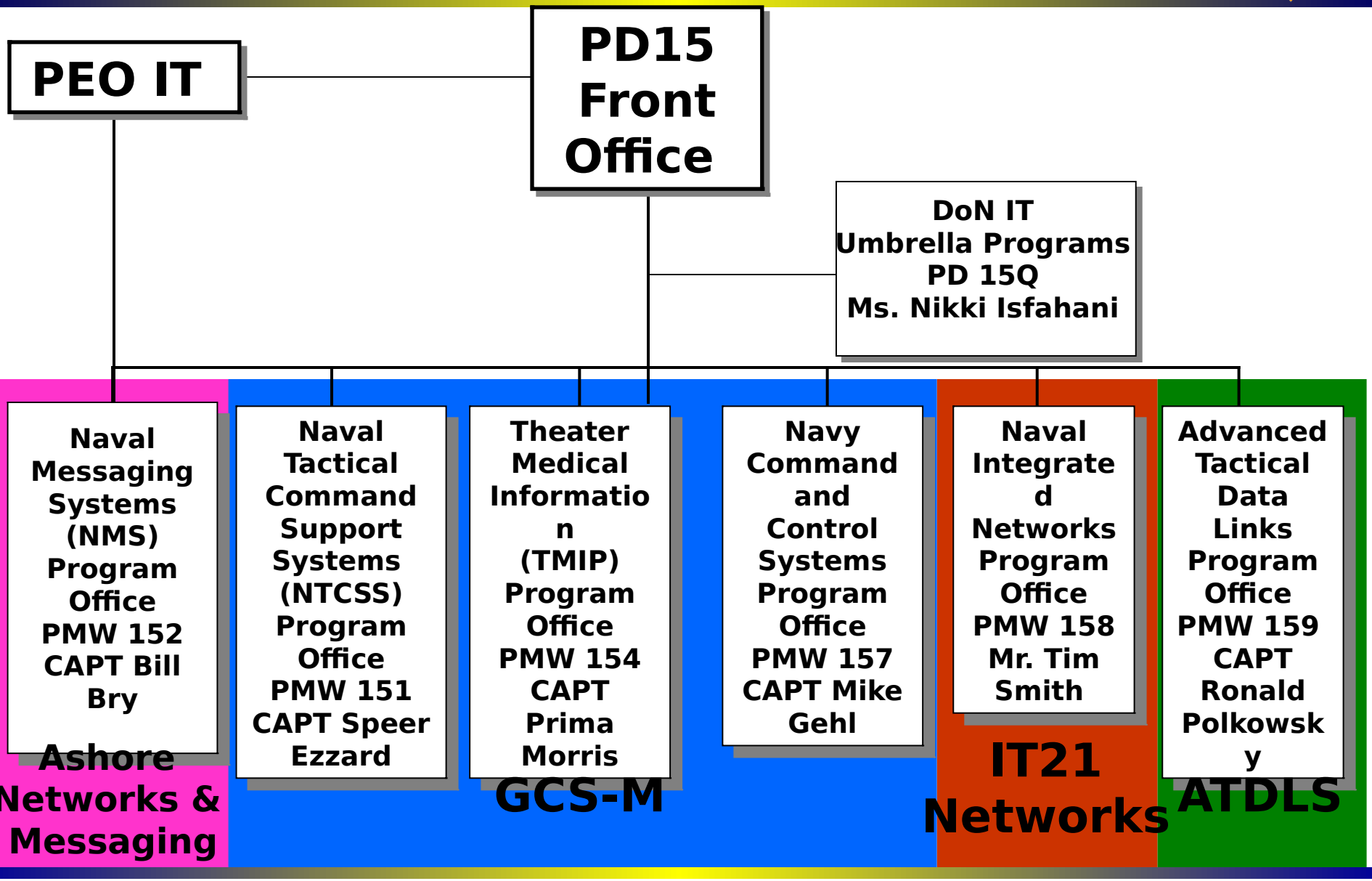
Points of Contact

Code/Position	Name	Phone Number
PMW 151 Program Manager	CAPT Speer Ezzard	(619) 524-7553
PMW 151A Deputy Program Manager	Ms. Susan Linn	(619) 524-7555
PMW 151-1 Customer Liaison Div.	CDR Allen Booker	(619) 524-7961
PMW 151-2 System Acq. and Eng.	Mr. Sam Anderson	(619) 524-7564
PMW 151-3 Functional Requirements	LCDR Mike Kelly	(619) 524-7566
PD 15L Logistics Coordinator	Mr. Mike Taousakis	(619) 524-7545
PMW 151-4 Program Development Div	http://c4iweb.spawar.navy.mil/pmw151/	(619) 524-7543

Naval Tactical Command Support System

http://c4iweb.spawar.navy.mil/pmw151/

PD15 Organization



PD15 Focus Areas

- Afloat network “utility” - “The network is the computer”
  - ISNS/ADNS
  - Servers/PCs
  - Expansion (with control)
- Application bookshelf - application icons
  - Functionality “catch-up”
  - Targeting support
- Link-16 acceleration

Future Afloat LAN Design Tenets

- **LAN Backbone as a Utility**
  - Support LAN Expansion for Internal/External Customers
    - Easy Expansion of Utility (Backbone / Edge Switches / Drops)
    - Provide Clear/Easy Guidance on Expansion/Changes
- **Core Services to support as needed**
  - VVD, HM&E, PBX, SMARTSHIP
  - Network as a service, not a stand alone system
- **Standard Configuration, Same Hardware and Software across BG/ARG**
  - Force Level/Command Ships Backbone Configuration
  - Shooters/Amphib Ships Backbone Configuration
  - Unit Level Ships Backbone Configurations
  - Use of low cost switch to meet expansion requirements

New LAN Design

Port Count			
Type	Required	Available	Open
OC-12 (Single Mode)	16	32	16
Ethernet (10FL)		64	
*Ethernet (10/100T)		2880	

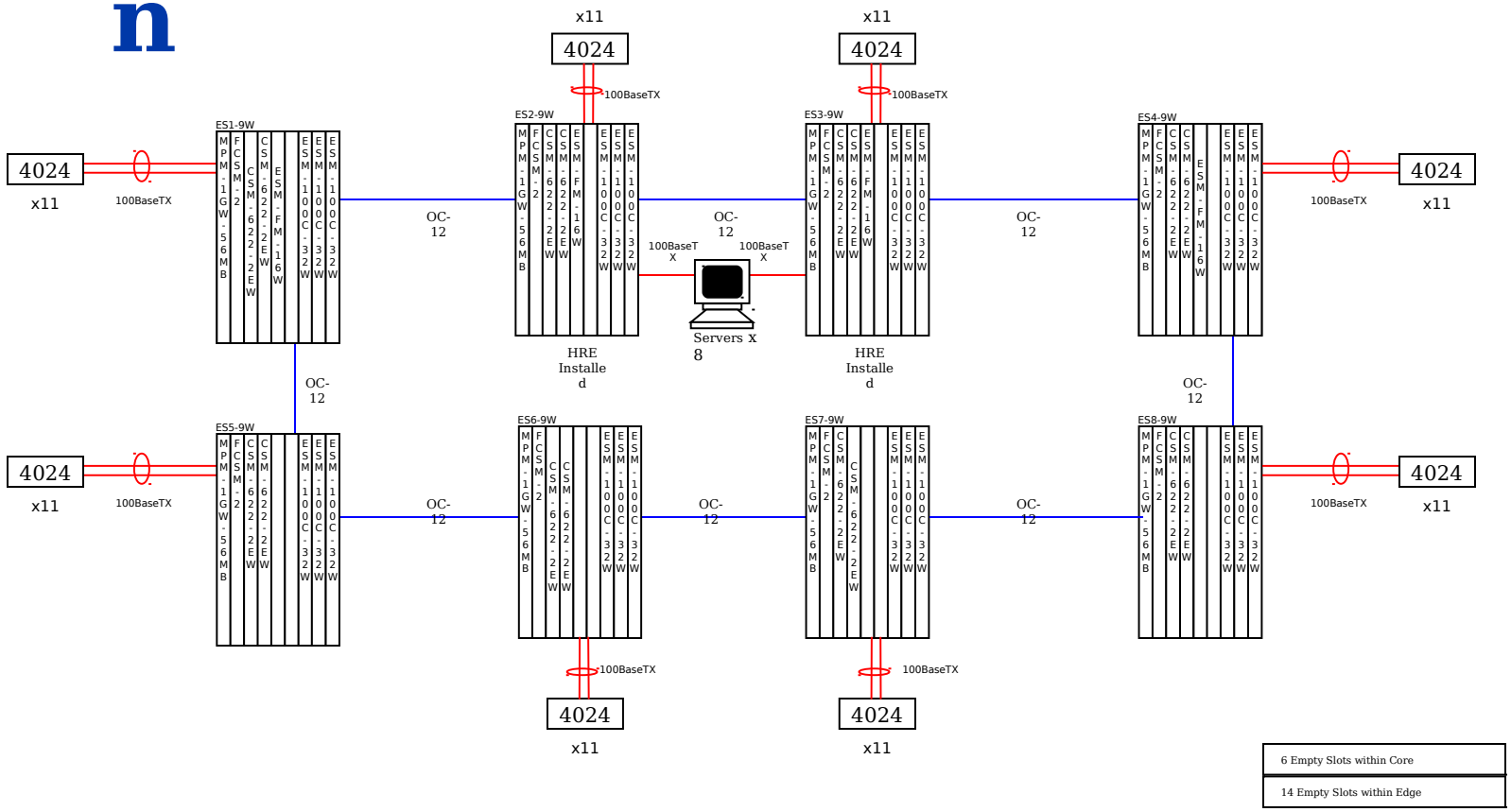
*Includes (11) 4024 Stackables connected to each Edge Switch

CVN Unclassified

OC-12 SM Fiber

100BaseTX (Copper)

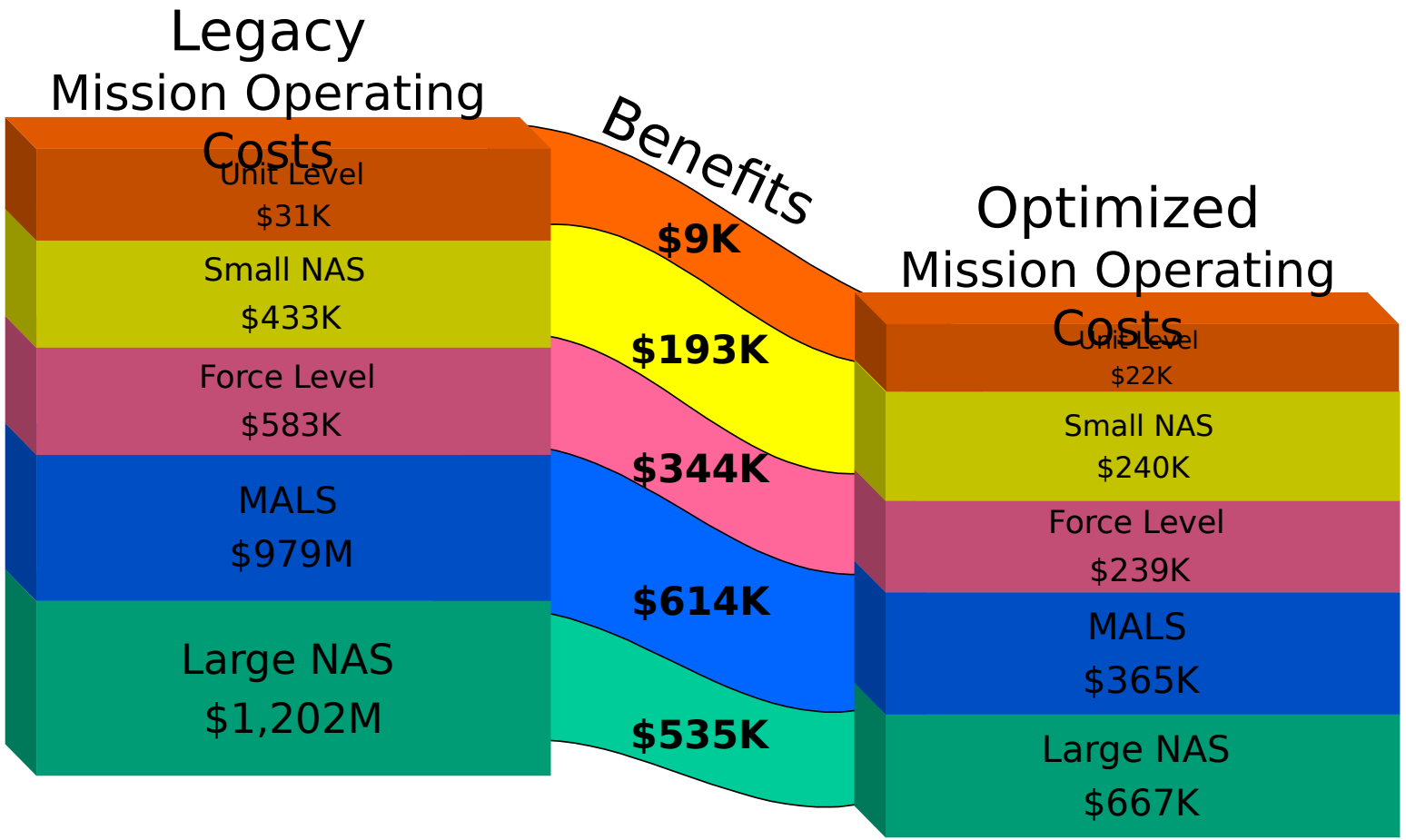
Links logically trunked together via Omni-Channel



Other NTCSS Applications

- Automated Technical Information System (ATIS)
  - Engineering drawings and tech manuals on CDROM
- Food Service Management (FSM)
  - Mess menu and inventory management
- Retail Operations Management (RO
  - Comprehensive Ship's Store AIS
- Shipboard Automated Medical Syst (SAMS)
  - Medical management for Independent Duty C
- Maintenance Resource Manageme (MRMS)
  - Ships Intermediate Maintenance Activity (SIM...)

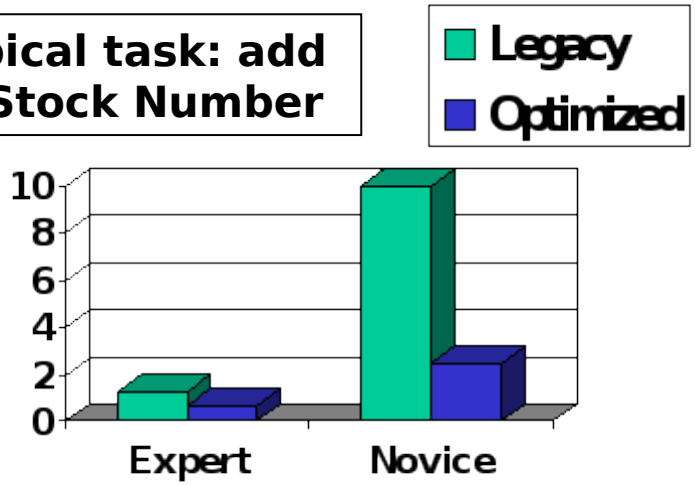
Annual Value-Added Benefits



Reflects one activity of each type

Readiness Benefits

Typical task: add a Stock Number



- All users are able to work faster
- Optimized applications are much more Intuitive
- Expert users discover "functionality"
- Managers can see information displayed in different ways (graphically)
- The help button really helps

Engine Analysis Scenario

- Average engine repair turnaround time reduced from 9.75 days to 8.37 days.
- 3 more days of sortie generation available to warfighter
- 281 additional sorties available
  - 461 additional F/A-18 flight hours

…1.67% increase in the number of sorties available

based on analysis of engine repair cycles

Automated Maintenance Environment Goals

- Provide Modern, Flexible Information System Infrastructure for Aviation Squadron Maintenance Environment
  - “Plug and Play” of Weapons System Peculiar Software
  - Graphical Common User Presentation
  - Improve Accuracy of Tactical Support Data
  - Make Data More Available to Fleet User and Manager
- Provide Data to Squadron Maintenance for More Efficient On-Aircraft Maintenance and Off-Aircraft Production Management
  - Automation of Maintenance and Technical Data From Aircraft
  - Use Weapon System Software for Diagnostics and Prognostics
  - Incorporate Interactive Electronic Technical Data.
- Initial AME Capabilities Demonstrated in AMIDD
  - A DARPA funded effort

O-LEVEL AME Notional

IDE (NALDA)

Memory Unit

Pilot and Maintainer Observables

AIT

PEDD

Data Download

Debrief Diagnostic

Naval Flight Recor

Diagnostic, Training, IETM & Supply Data

Maintenance Data Flight Data

IETM Training & Maintenance Data

MAF Fault Definition Data

Work Center Functions

Maintenance Mgmt & Control

Task Status (Automated)

AIT

Configurati on Changes

IETM Interface

Document Maint. Actions & Configuration Changes

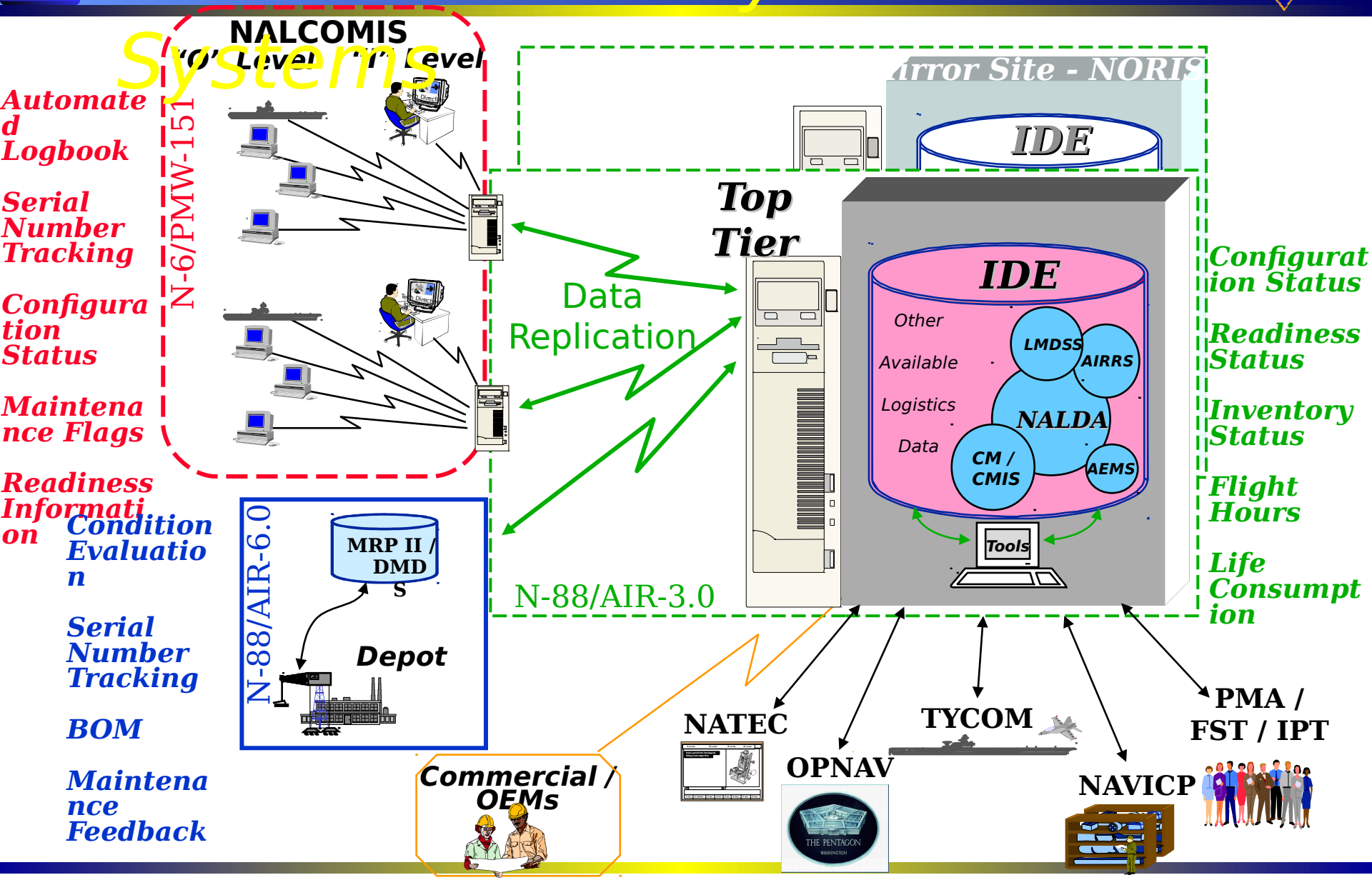
Inspections

Quality Assuran ce

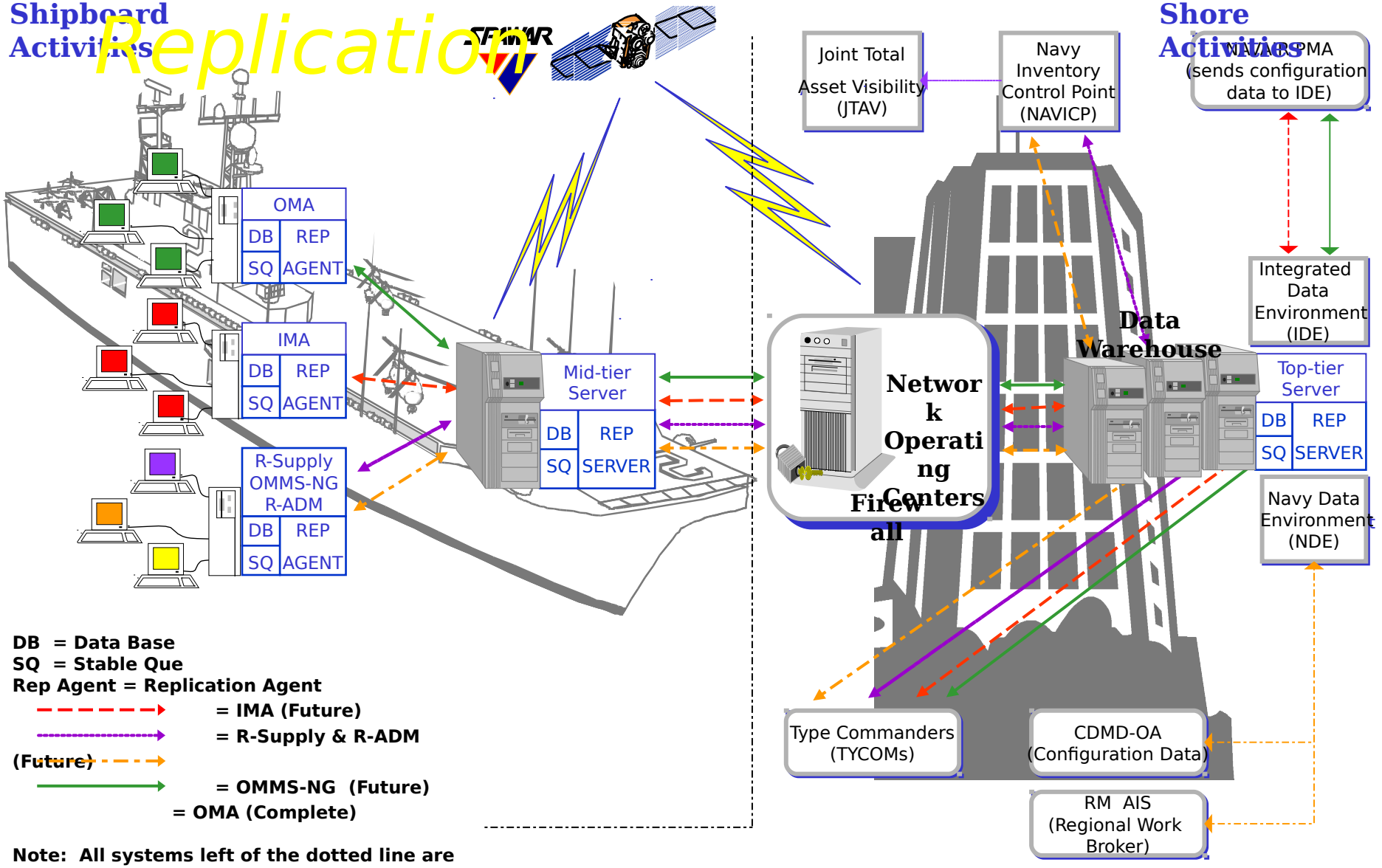
Platform Specific S/W Modules (engines, structures & other Diagnostics/Prognostics)

NALCOMIS IDE Platform Specific S/W

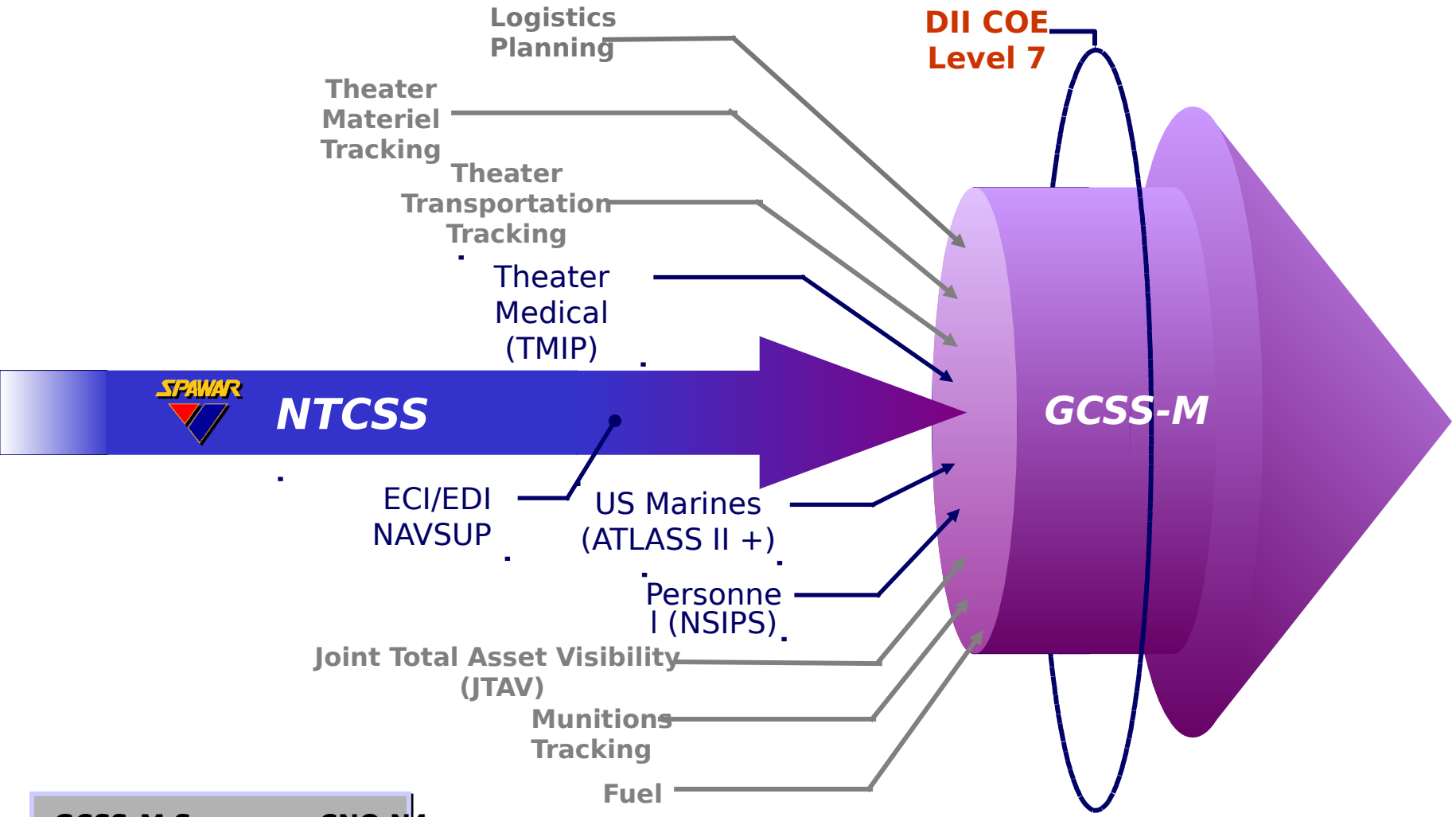
Naval Aviation System of Systems



NTCSS/OOMA Data Replication



Evolution of GCSS-M

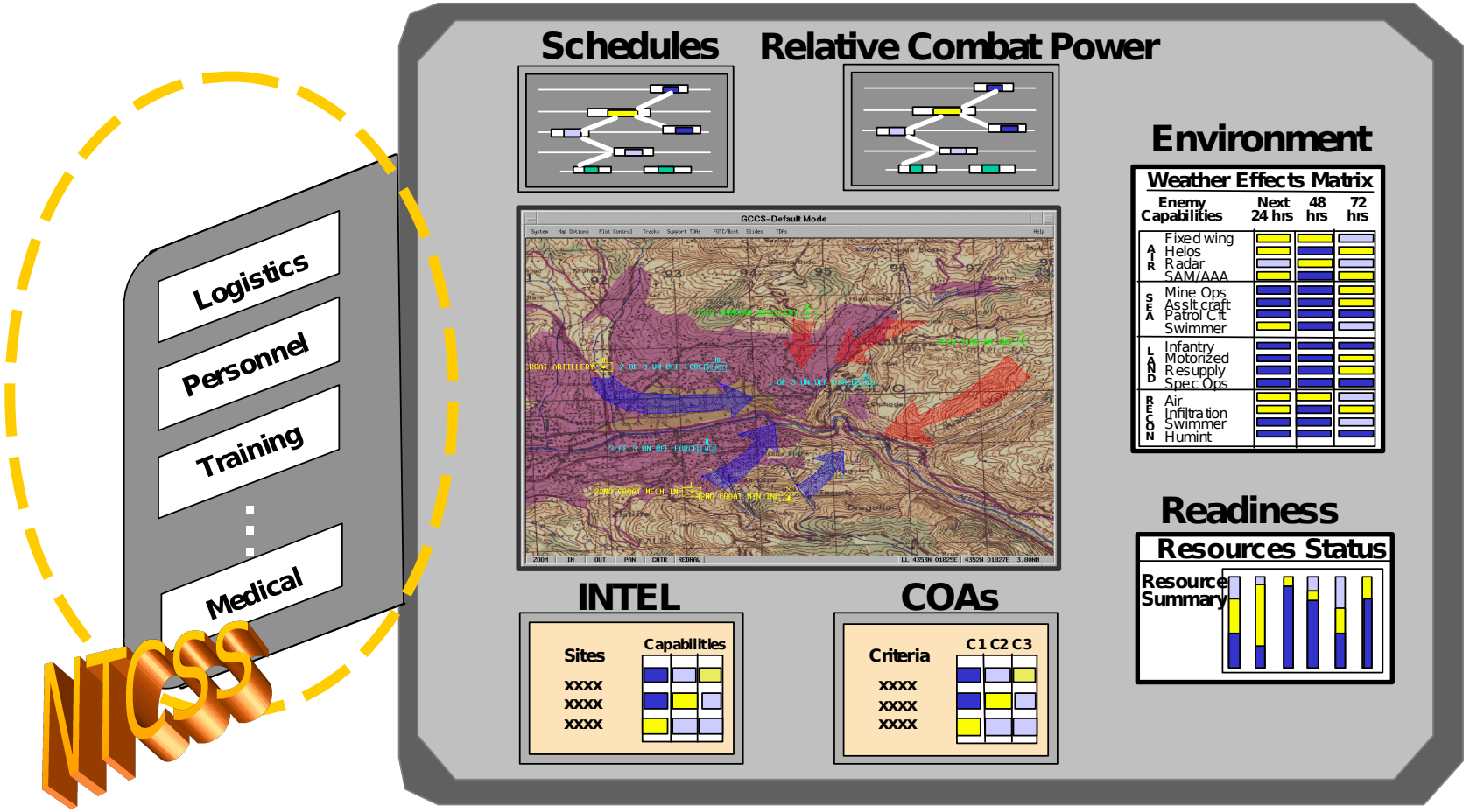


GCSS-M Sponsor: CNO N4

Common Operating Picture (COP)

Information for the warfighter

ccess to Integrated Information From A Single Windo



GCSS Requirements

Statement of Operational Requirements for the GCSS

Provides Information Technology (IT) Capability for:

- **Total Asset Visibility**
- **Deployment/Redeployment, Force tracking & Sustainment**
- **Collaborative Course of Action (CCOA) Analysis**
- **Personnel, Health Protection, and Financial Analysis**
- **Visualization of the Battlespace**
- **Execution Monitoring and Analysis**
- **Mobilization and Force Reconstitution Analysis**
- **Miscellaneous (Ad Hoc Query) & a deployable GCSS capability that interfaces with GCCS**

NTCSS currently not GCSS-M.

- **Of the 129 GCSS CINC Requirements, NTCSS fullfills 20%**